BAKHTIN, I.A.; KRASNOSEL'SKIY, M.A.; STETSENKO, V.Ya.

Continuity of linear positive operators. Sib. mat. zhur. 3 no.1:156-160 Ja-F '62. (MIRA 15:3)
(Operators (Mathematics))

L 12735-63 BDS/EWT(d)/FCC(w) AFFTC IJP(C)

S/208/63/003/002/014/014

56
53

AUTHOR: Bakhtin, I. A., Krasnosel'skiy, M. A., and Levin, A. Yu. (Voronezh)

TITLE: The localization of the extremum of a function on a polyhedron

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 3, no. 2, 1963, 400-409

TEXT: Algorithms for the solution of the problem stated in the title are as yet poorly developed since the application of the general methods of differential calculus demands an independent analysis of the function along all the sides of various scales. The authors divided the problem into three parts, 1) the search for (or estimate of) the largest scale of the side whose inner point can be an extremum point, 2) the discovery of that maximum side by sufficiently simple means, and 3) the location of the extremum point proper. The paper develops such a scheme for the special function

$$\Phi(x) = \sum_{j=1}^{l} \prod_{i=1}^{n} a_{ij}^{x_{ij}} \qquad (1)$$

Card 1/2

L 12735-63

S/208/63/003/002/014/014

The localization of ....

where $0 < \alpha_{ij} \leqslant 1$, on the polyhedron

$$x_{ij} \geqslant 0, \quad x_{i1} + x_{i2} + \ldots + x_{il} = m_i \quad (i = 1,\ldots,n) \qquad (2)$$

and discusses cases with $n = 1$ and $n = 2$. The authors note that one of them (I. A. Bakhtin) completed the establishment of exact and approximate investigation method for the cases $n \leqslant 3$. The convergence of the processes presented in this paper were investigated by P. P. Zaboreyko and Yu. V. Pokornyy. Ye. G. Gol'shteyn informed the authors that he completed the study of a similar approximation method for a wide class of functions, which contains function (1) as a special case.

SUBMITTED: March 3, 1962

Card 2/2

S/199/63/004/002/002/013
B172/B186

AUTHOR: Bakhtin, I. A.

TITLE: Linear equations with uniformly concave operators

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 4, no. 2, 1963, 268-286

TEXT: In a real Banach space E, two cones K and K_1 are given for which $K \subset K_1$. E is of a semiorder by the definition "$x \leq y$, if $y-x \in K_1$". A nonlinear operator A is given over K, which is positive ($AK \subset K$) and monotonic (from $x \leq y$ $(x, y \in K)$ follows $Ax \leq Ay$). A is called concave, if for any non-zero $x \in K$ there exist such numbers as $\alpha, \beta > 0$ for which

$$\alpha u_0 \leq Ax \leq \beta u_0$$

where $u_0 \neq 0$ is a fixed element from K, and if for every $t \in (0,1)$ and all

$$x \geq \gamma u_0 \quad (x \in K,\ \gamma = \gamma(x) > 0)$$

the inequalities

Card 1/2

S/199/63/004/002/002/013
B172/B186

$$Atx \geqslant tAx,\ Atx \neq tAx$$

are satisfied. A concave operator A is called uniformly u_0-concave, if the inequality $At\varphi > (1+\eta)tA\varphi$ holds for every $\varphi \in K$ satisfying the inequalities $\mu u_0 \leq \varphi \leq \nu u_0$ $(\mu, \nu > 0)$ and for all t of every closed interval a,b $\subset (0,1)$. $\eta > 0$ depends only on μ, ν, a, and b. A number of theorems on the existence of eigenvectors of an equation $\varphi = A\varphi$ in which A is uniformly u_0-concave, as well as on the structure of systems of eigenvectors and sets of eigenvalues are proved. This theory is extended to positive operators A for which a natural number k exists such that $(\mu A)^k$ for every $\mu > 0$ is uniformly u_0-concave. Finally, an example is given for a uniformly u_0-concave operator in a real Hilbert space.

SUBMITTED: May 25, 1961

S/020/63/148/004/001/025
B172/B180

AUTHOR: Bakhtin, I. A.

TITLE: Optimum values and points of certain nonlinear function

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 4, 1963, 741 - 744

TEXT: A function $\Phi = \sum_{j=1}^{L} \prod_{i=1}^{N} x_{ij}^{x_{ij}}$ $(0 < \alpha_{ij} = 1)$ on a domain $\sum_{j=1}^{L} x_{ij} = m_i$ $(m_i > 0;\ i=1, \ldots, N)$ $x_{ij} \geq 0$ $(i = 1, \ldots, N;\ j = 1, \ldots, L)$ is considered. None of the sets $\{\alpha_{1j}\}, \ldots, \{\alpha_{Nj}\}$ may entirely consist of single units. The equation $x_0 = (x_{ij}^0) = \begin{pmatrix} x_{11}^0 & \ldots & x_{1L}^0 \\ \ldots & \ldots & \ldots \\ x_{N1}^0 & \ldots & x_{NL}^0 \end{pmatrix}$ denotes a point in which the function (1) assumes its smallest value. If $x_{ij_1}^0, x_{ij_2}^0, \ldots, x_{ij_k}^0$ $(k < L)$ are the numbers of the i-th row which differ from 0, then a positive number h_i exists such that $h_i = |\ln \alpha_{ij}| / \alpha_{ij}^{x_{ij}^0} \alpha_{2j}^{x_{2j}^0} \ldots \alpha_{Nj}^{x_{Nj}^0}$ holds for

Card 1/2

S/020/63/148/004/001/025
B172/B180

Optimum values and points ...

$j = j_1, j_2, \ldots, j_k$ and $h_i \geqslant |\ln \alpha_{ij}| \alpha_{1j}^{x_{1j}^0} \alpha_{2j}^{x_{2j}^0} \ldots \alpha_{Nj}^{x_{Nj}^0}$ holds for all other j. The numbers $h_1, \ldots, h_N$ and $\varkappa_1 = 1, \varkappa_2 = h_2/h_1, \ldots, \varkappa_N = h_N/h_1$ are called characteristic numbers of function (1). Three theorems are formulated showing that the determination of the optimum points X_0 and values $\Phi(X_0)$ can be reduced to the determination of the characteristic numbers $\varkappa_1, \varkappa_2, \ldots, \varkappa_N$. Another theorem leads to a method of division in half by which $\varkappa_N$ can be determined if $\varkappa_2, \ldots, \varkappa_{N-1}$ are known.

ASSOCIATION: Voronezhskiy gosudarstvennyy pedagogicheskiy institut
(Voronezh State Pedagogical Institute)

PRESENTED: August 13, 1962, by S. L. Sobolev, Academician

SUBMITTED: August 7, 1962

Card 2/2

ACCESSION NR: AP4037552 S/0039/64/064/001/0102/0114

AUTHOR: Bakhtin, I. A. (Voronezh)

TITLE: Existence of eigenvectors for linear positive not completely continuous operators

SOURCE: Matematicheskiy sbornik, v. 64, no. 1, 1964, 102-114

TOPIC TAGS: eigenvector, linear positive operator, nonsingular matrix, integral equation, positive kernel, continuous operator, Banach space

ABSTRACT: The author extends a result of M. A. Rutman (Sur les operateurs totalement continus lineaires laissant invariant un certain cone, Matem. sb., 8 (50) (1940), 77-93), which has been generalized by several other authors, to new classes of linear positive not completely continuous operators. He establishes the existence of an eigenvector for a linear positive operator A on some cone $K_{u_0,k}$. He establishes the existence of the desired type of eigenvector for the operator A based on the behavior of A^m for some m. He proves a theorem of existence for the eigenvector of the linear operator A generating a cone K of nonnegative functions of the space C of functions continuous on [0,1] in the cone of convex functions.

Card 1/2

ACCESSION NR: AP4037552

He proves existence of an eigenvector for a linear operator which is u_0-bounded on a right minihedral cone K. "In conclusion the author expresses his gratitude to M. A. Krasnosel'skiy for his valuable remarks." Orig. art. has: 48 formulas.

ASSOCIATION: none

SUBMITTED: 26Apr63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: MA NO REF SOV: 009 OTHER: 003

Card 2/2

BAKHTIN, I.A. (Voronezh)

An extremum problem. Zhur. vych. mat. i mat.fiz. 4 no.1:120-135 Ja-F '64. (MIRA 17:6)

ACCESSION NR: AP4040768 S/0021/64/000/006/0730/0734

AUTHOR: Bakhtin, I. O. (Bakhtin, I. A.)

TITLE: An approximate method of finding the optimal values of a nonlinear function

SOURCE: AN UkrRSR. Dopovidi, no. 6, 1964, 730-734

TOPIC TAGS: Optimal value, extremum, minimum, least value, non linear function solution, function mapping

ABSTRACT: An approximate method is described for finding the least value, and the points at which this value is attained, of the function

$$\Phi = \sum_{i=1}^{k} a_i^{x_i} b_i^{y_i} \quad (0 < a_i, b_i < 1) \tag{1}$$

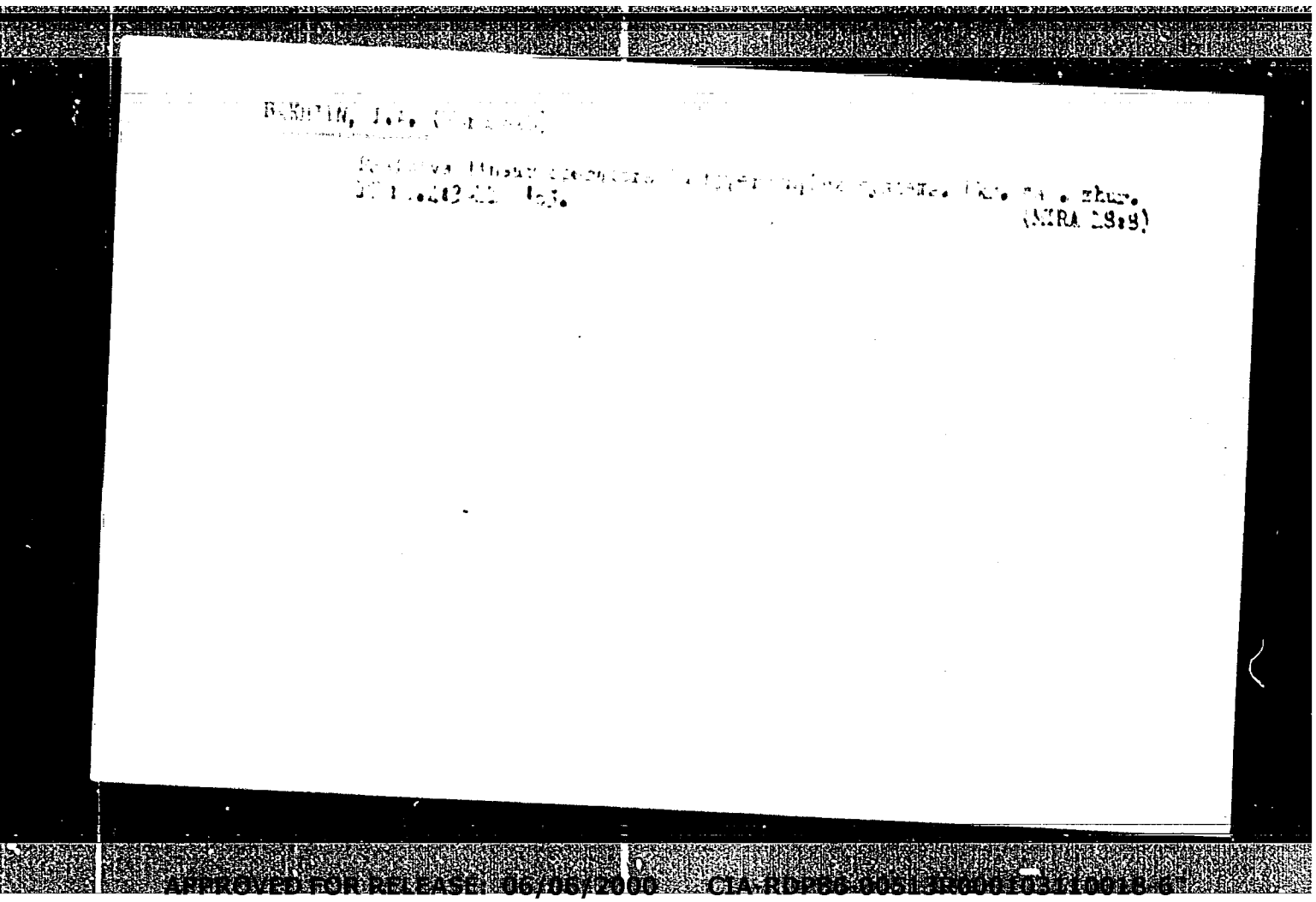
on the polyhedron

$$x_i, y_i > 0; \ \sum_{i=1}^{k} x_i = m_1, \ \sum_{i=1}^{k} y_i = m_2 (m_1, m_2 > 0). \tag{2}$$

In comparison to the exact method of I. A. Bakhtin, M. A. Krasnocel'skiy and

BAKHTIN, I.A.

Geometry of cones in a Banach space. Sib.mat.zhur. 6 no.2:262-270 Mr-Ap '65. (MIRA 18:5)



BAKHTIN, I.A. (Voronezh)

Existence of a general eigenvector in a commutative set of linear positive operators. Mat. sbor. 67 no.2:267-278 Je '65.

(MIRA 18:8)

L 22560-66 EWT(d) IJP(c)
ACC NR: AP6005841 SOURCE CODE: UR/0199/65/006/005/0949/0957

AUTHOR: Bakhtin, I. A.

ORG: none

TITLE: On the existence of semi-eigenvectors and criticality in a reactor

SOURCE: Sibirskiy matematicheskiy zhurnal, v. 6, no. 5, 949-957

TOPIC TAGS: nuclear reactor technology, neutron distribution, eigenvector, Banach space

ABSTRACT: Existence theorems are proved for the solutions of the system

$$x = \mu A(x, y), \quad y = B(x, y) \qquad (1)$$

and these results are applied to the study of criticality in a nuclear reactor. The equations (1) are rewritten in the form

$$z = C(\mu)z.$$

and a solution $z = (x, y)$ is called a semi-eigenvector of the operator C if $x \neq \theta$. The existence of such vector solutions is proved under various assumptions for continuous operators C. The theorems are used to prove that, for the set of integral equa-

Card 1/2 UDC: 513.882

ACC NR: AP6005841

tions

$$\Phi(P) = \mu \int_V K(P, Q) a[T(Q) + T_0] \Phi(Q) dQ = \mu A(\Phi, T),$$

$$T(P) = \int_V K(P, Q) b[T(Q) + T_0] \Phi(Q) dQ = B(\Phi, T),$$

describing the neutron distribution and temperature regime in a reactor, the operator semi-eigenvectors form a conditionally continuous branch infinite in length. In conclusion the author expresses his gratitude to M. A. Krasnosel'skiy for his attention to this work. Orig. art. has: 30 formulas.

SUB CODE: 18,12/ SUBM DATE: 19Sep64/ ORIG REF: 004/ OTH REF: 000

Card 2/2 BK

L 20686-66 EWT(d) IJP(c)

ACC NR: AP6012001 SOURCE CODE: UR/0199/65/006/002/0262/0270

AUTHOR: Bakhtin, I. A.

ORG: none

TITLE: Geometry of cones in a Banach space

16
15
13

SOURCE: Sibirskiy matematicheskiy zhurnal, v. 6, no. 2, 1965, 262-270

TOPIC TAGS: geometry, Banach space

ABSTRACT: The article presents a new criterion for the normality of a cone K and a corollary thereof and investigates so-called "space cones." The terminology used is that of M. G. KREYN's theory of cones in a Banach space. The author outlines the proof of the following theorem (Theorem 1): In order for the cone K to be normal, it is necessary and sufficient that each monotonic bounded sequence

$$x_1 \leqslant x_2 \leqslant \ldots \leqslant x_n \leqslant \ldots \leqslant u$$

be weakly fundamental. The following corollary is given for Theorem 1: If the space E is weakly complete and the cone K normal, then K is weakly regular. The following theorems are also formulated and proved: Theorem 3: If cone K is reproducing, cone K* is weakly completely regular. Theorem 4: Each space cone K of a finite-dimensional space E is a reproducing cone. Theorem 5 (M. A. Krasnosel'skiy): Each locally compact space cone K of an infinite-dimensional space E is almost a reproducing cone. Theorem 6: In order for a set K* of linear

Card 1/2

UDC: 517.982

L 20685-66

ACC NR: AP6012001

positive functionals of space E* to be a cone, it is necessary and sufficient that cone K be a space cone. Theorem 7: In order for the space cone K of a reflexive space E to be reproducing, it is necessary and sufficient that the cone K* be normal. Theorem 8: Let $K \subset E$ be a space cone. In order for a conjugate cone K* to be normal, it is necessary and sufficient that there exist $\alpha_0 > 0$ such that for any functional $f \in E^*$ $(f \neq 0)$ the distance

$$\rho(x_f, E_f) \geqslant \alpha_0,$$

where $x_f \in K$ is a certain normed element and E_f is a subspace of zeros of the functional f. The author thanks M. A. Krasnosel'skiy for valuable remarks. Orig. art. has: 3 figures and 5 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 14May64 / ORIG REF: 007

Card 2/2 BK

L 24476-66 EWT(d)/EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/T IJP(c) WW

ACC NR: AP6009482 SOURCE CODE: UR/0020/66/167/001/0016/0018

38
37

AUTHOR: Bakhtin, I. A.

B

ORG: Voronezh State Pedagogical Institute (Voronezhskiy gosudarstvennyy pedagogicheskiy institut)

16

TITLE: Application of topological methods to the study of critical conditions of a reactor

19

SOURCE: AN SSSR. Doklady, v. 167, no. 1, 1966, 16-18

TOPIC TAGS: topology, Banach space, integral equation, linear operator, vector, differential equation, nuclear reactor, neutron flux, temperature distribution

ABSTRACT: The topological methods of M. A. Krasnosel'skiy (Topologicheskiy metody v teorii nelineynykh integral'nykh uravneniy, Moscow, 1956) are used to study a special system of equations of the form

$$x = \mu A(x, y),$$
$$y = B(x, y).$$

The obtained results are applied to the study of critical conditions of a reactor,

2

Card 1/2 UDC: 513.882

and two theorems on calculating the rotation of vector fields are formulated. The distribution of the neutron flux Ψ and temperature T over the volume of the reactor is described by the equations

$$\nabla^2\Phi + \mu a(T)\Phi = 0, \quad \Phi|_\Sigma = 0;$$

$$\nabla^2 T + b(T)\Phi = 0, \quad T|_\Sigma = T_0,$$

where Σ is the boundary of the reactor. This system is replaced by the equivalent system of differential equations

$$\Phi(P) = \mu \int_V K(P, Q)\, a[T(Q) + T_0]\, \Phi(Q)\, dQ = \mu A(\Phi, T),$$

$$T(P) = \int_V K(P, Q)\, b[T(Q) + T_0]\, \Phi(Q)\, dQ = B(\Phi, T).$$

It is shown that the half-spectrum of this system includes the interval $\left(\frac{1}{\mu_0}, \frac{1}{\mu_0}\frac{a_0}{a(T_0)}\right)$. "The author thanks M. A. Krasnosel'skiy for attention to the work." This paper was presented by I. N. Vekua, academician, on 24 May 1965. Orig. art. has: 4 formulas.

SUB CODE: 12,18/ SUBM DATE: 15May65/ ORIG REF: 003

ACC NR: AP7001668 SOURCE CODE: UR/0199/66/007/003/0512/0522

AUTHOR: Bakhtin, I. A.

ORG: none

16
6

TITLE: Existence and number of solutions to equations with positive operators

SOURCE: Sibirskiy matematicheskiy zhurnal, v. 7, no. 3, 1966, 512-522

TOPIC TAGS: mathematic operator, operator equation

ABSTRACT: The article establishes that under certain conditions positive solutions to operator equations form a finite number of nonintersecting continuous branches of infinite length. The author thanks M. A. Krasnosel'skiy for his interest in the article. Orig. art. has: 20 formulas. [JPRS: 37,751]

SUB CODE: 12 / SUBM DATE: 05May65 / ORIG REF: 006

Card 1/1 11b

UDC: 513.882

BRATKOVA, N.A.; BAKHTIN, L.A.; SOKOLOVSKIY, A.A.

Drying of the solutions and crystallization of the melts of ammonium nitrate in a fluidized bed. Khim. prom. 41 no.8: 594-596 Ag '65. (MIPA 18:9)

BAKHTIN, N.

Work in coordination with the railroads. Mech. transp. 24 no.4:17 '65. (MIRA 18:5)

1. Nachal'nik Volgogradskogo porta.

BAKHTIN, Nikolay Prokop'yevich; POPOV, I.V., otv. red.; DERYUGINA, V.N., red.; RUSAKOVA, G.Ya., red.; VOLKOV, N.V., tekhn. red.

[The Yenisey River] Reka Enisei. Leningrad, Gidrometeor. izd-vo, 1961. 122 p. (MIRA 15:5)
(Yenisey River)

BAKHTIN, O.B., inzh.; TKACHUK, K.N., inzh.; KUDRYAVTSEV, M.V., inzh.

Results of tests of new explosives in a pit of the New Krivoy Rog Mining and Ore Dressing Combine. Nauch.zap.Ukrniiproekta no.5:157-159 '61. (MIRA 15:7)
(Krivoy Rog Basin--Explosives--Testing)

NESTERENKO, V.V., inzh.; BOGUSLAVSKIY, M.M., inzh.; AL'BRUT, B.I., inzh.; BAKHTIN, O.B., inzh.

Sublevel stoping. Mot. i gornorud. prom. no.4:52-55 Jl-Ag '62. (MIRA 15:9)

(Stoping (Mining))

KANDYBA, M.I., kand.tekhn.nauk; BLAGODARENKO, Yu.L., inzh.;
BAKHTIN, O.B., inzh.; KARPINSKIY, A.V., inzh.

Testing of blasting delay elements. Met. i gornorud.
prom. no.4:81-83 Jl-Ag '62. (MIRA 15:9)
(Blasting)

KANDYBA, M.I., kand.tekhn.nauk; TURUTA, N.U., kand.tekh.nauk; BLAGODARENKO, Yu. L., inzh.; BAKHTIN, O.B., inzh.

Effect of decentralizing the explosive charges on the seismic effect in blasting. Mot. i gornorud. prom. no.3:45-47 My-Je '63.(MIRA 17:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut ugol'noy, rudnoy, neftyanoy i gazovoy promyshlennosti UkrSSR.

KANDYBA, M.I., kand. tekhn. nauk; TURUTA, N.U., kand. tekhn. nauk; BOGDANOV, P.A., inzh.; BLAGODARENKO, Yu.L., inzh.; BAKHTIN, O.B., inzh.; KARPIŃSKIY, A.V., inzh.

Seismic effect of large-scale blasting on a rock massif. Nauch. sap. Ukrniiproekta no.10:126-132 '63. (MIRA 17:6)

KANDYBA, M.I., kand. tekhn. nauk; TURUTA, N.U., kand. tekhn. nauk;
BLAGODARENKO, Yu.L., gornyy inzh.; BAKHTIN, O.B., gornyy inzh.

Studying the seismic effect using modern techniques of boring and blasting operations. Vzryv. delo no.54/11: 190-198 '64. (MIRA 17:9)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut ugol'noy rudnoy, neftyanoy i gazovoy promyshlennosti UkrSSR, Kiyev.

KANDYBA, M.I.; TURUTA, N.U.; ALEKSEYEV, F.K.; BLAGODARENKO, Yu.L.; BAKHTIN, O.B.; NESTEROV, P.G.

Taking into account the effect of seismic waves in the selection of a network of blastholes. Met. i gornorud. prom. no.1: 54-55 Ja-F '64. (MIRA 17:10)

TURUTA, N.U., kand. tekhn. nauk; BLAGODARENKO, Yu.L.; BAKHTIN, O.B.; KUTSENKO, F.F.

Seismic effect in the use of various types of charges and short-delay blasting. Met. i gornorud. prom. no.6:54-55 N-D '65. (MIRA 18:12)

BAKHTIN, P. U.

Cand Agricult Sci

Dissertation: "Dynamics of Physicomechanical Properties of Soils in Regard to their Treatment in Grassland Rotation Systems." 3/5/50

Soil Inst imeni V. V. Dokuchayev, Acad Sci USSR

SO Vecheryaya Moskva
Sum 71

BA

BAKHTIN, P. U.

Rôle of earthworms in structure formation of sod-podzolised soils. P. U. Bakhtin and M. N. Polsky (*Pochvovedenie*, [illegible], [illegible]—491; *Soils & Fert.*, [illegible], 13, 417).—The stability of aggregates formed from worm coprolites was much greater than of those formed from other material. The porosity of the coprolite material was greater than that of the non-coprolite. Calcite was a regular constituent of coprolites. The structure-forming properties of coprolites are due to the presence of intestinal juices which glue the soil particles together and to $CaCO_3$ which preserves the porosity of the aggregates.

A. H. Cornfield.

BAKHTIN, P. U.

"Moisture Content of Soil and Speed of Plowing," Pochvoved., No.5, 1952

Tillage - Moscow Province

Specific resistance and optiral moisture for working soils of several collective farms of Moscow Province. Pochvovedenie No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress June 1953. UNCL.

BAKHTIN, P.U., kandidat sel'skokhozyaystvennykh nauk.

Evaluating the performance of a P-5-35M plow on turf and podsolic soils. Sel'khozmashina no.11:11-14 N '54. (MLRA 7:11)

1. Pochvennyy institut Akademii nauk SSSR.
(Plows)

BAKHTIN

USSR.

A study of the structure of the plowed layer of a sod-podzolized soil in relation to tillage. K. I. Raityan, P. U. Bakhtin, and K. S. Khvytya. *Pochvovedenie* 1934, No. 11-12, 69-85.—Besides the mechanical compn. of the different particle-size fractions of the plowed layer of 2 profiles, in grs and clover-timothy 3-year-old sod, the chem. compn. (SiO_2, Fe_2O_3, Al_2O_3, TiO_2, P_2O_5, CaO, MgO, MnO_2, alkalies in terms of Na_2O, loss on ignition, humus, exchangeable ions, hydrolytic acidity, and pH of H_2O and neutral salt ext.) of a series of particle-size fractions is given.

J. S. Joffe

USSR / Soil Science. Tillage. Reclamation. Erosion. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6098.

Author : Bakhtin, P. U.
Inst : AS USSR.
Title : Evaluation of the Water System of Soils Under Normal Cultivation and According to the T. S. Mal'tsev Method During 1955-1956.

Orig Pub: Izv. AN SSSR. Ser. biol., 1957, No 4, 431-444.

Abstract: Observations were conducted at the Shadrinskaya and Kurganskaya experimental stations on chernozem soils, meadow-chernozem soils, and on meadow-steppe soils. Compared with normal plowing, deep moldboardless plowing raises the water permeability in a 100 centimeter layer by 14 - 74 mm., decreases the moisture capacity, and increases the

Card 1/3

USSR / Soil Science. Tillage. Reclamation. Erosion. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6098.

Abstract: loss of moisture through evaporation during a rainless summer period. On slopes, plowing without a moldboardless enabled deep soaking of the soil and the raising of water reserves in it during the autumn and spring seasons. Deep fallows for defrosting and sowing of the soil often contain moisture in an easily accessible form in greater amounts than do normal fallows, but this advantage disappears within 2-3 weeks after sowing, and, in some instances, even before sowing time. The advantage of deep fallows over normal ones as to the water regime of soils in the summer was observed only during periods of abundant rainfalls. The difference of the water regime of soils after plowing with a moldboard to a depth

Card 2/3

37

USSR / Soil Science. Tillage. Reclamation. Erosion. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6098.

Abstract: of 20-22 cm. and disking at 5-8 cm. is insignificant in soils with close subsurface waters, and rises sharply in the meadow-steppe type of chernozem soils with deep seated subsurface waters when plowing with a moldboard is applied. -- Ye. A. Dmitriyev.

Card 3/3

AFANAS'YEVA, Ye.A.; BAKHTIN, P.U.

Classification of forest-steppe soils of the Western Siberian Lowland undergoing the transition from meadow to Chernozem soils [with summary in English]. Pochvovedenie no.7:76-85 Jl '58. (MIRA 11:8)
(Siberia, Western--Soils--Classification)

BAKHTIN, P.U.; L'VOV, A.S. [deceased]

Hardness dynamics of certain soils of the middle trans-Volga region and the southern trans-Ural region. Pochvovedenie no.5:53-63 My '60. (MIRA 14:4)

1. Pochvennyy institut imeni V. V. Dokuchayeva, AN SSSR.
(Volga Valley--Soil physics)
(Siberia, Western--Soil physics)

BAKHTIN, P.U.

Cultivating soil by plowing at various speeds. Zemledelie 8 no.9:39-42 S '60. (MIRA 13:8)

1. Pochvennyy institut Akademii nauk SSSR.
(Plowing)

BAKHTIN, P.U.; VOLOTSKAYA, V.I.

Specific resistance of gray forest soils to plowing on the "Pakhomovo" State Farm in Tula Province. Pochvovedenie no.4:68-77 Ap '61. (MIRA 14:6)

1. Pochvennyy institut imeni V.V.Dokuchayeva AN SSSR.
(Tula Province—Soil physics) (Plowing)

BAKHTIN, P.U.; NIKOLAYEVA, I.N.; VOLOTSKAYA, V.I.

Shear strength, the coefficient of friction, and the cohesion of dark Chestnut soils and southern Chernozem soils. Pochvovedenie no.11:68-78 N '63. (MIRA 16:12)

1. Pochvennyy institut imeni V.V. Dokuchayeva.

BAKHTIN, P.U., kand. sel'skokhoz. nauk; VOLOTSKAYA, V.I.; NIKOLAYEVA, I.N.

Friction coefficient of the sliding of soil over metal for basic soil types in the U.S.S.R. Trakt.i sel'khozmash. no.6:31-33 Je'64 (MIRA 17:7)

ACCESSION NR: AP4020575 S/0057/64/034/003/0469/0473

AUTHOR: Zagorodnov, O.G.; Bolotin, L.I.; Bakhtin, V.D.

TITLE: Measurement of high-frequency fields in a plasma waveguide

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.3, 1964, 469-473

TOPIC TAGS: plasma, plasma waveguide, field distribution, field strength, field distribution measurement, field strength measurement, electric probe, electron beam field measurement

ABSTRACT: The longitudinal component of the high frequency electric field in a plasma waveguide was measured. The mercury vapor plasma was contained in a 7-cm diameter glass tube and was excited at 120 Mc by an external electrode at one end. The measurements were performed over a range of plasma densities yielding phase velocities from slightly greater than 0.7c to slightly less than 0.1c. No external magnetic field was applied. The radial distribution of the longitudinal electric field was determined with an electric probe that was movable radially within the plasma. Standing waves were produced by a reflector, and the probe was moved in a plane of maximum electric field. The field amplitude was found to reach a maximum at a radius

Card 1/3

ACC.NR. AP4020575

somewhat less than that of the tube. This is presumably due to a decrease in the electron density, and hence in the Langmuir frequency, as the wall of the tube is approached. The measurements were otherwise in good agreement with simple theoretical expectations, and it is concluded that the plasma density within the plasma waveguide can be determined by measurements of the electric field strength distribution outside it. The absolute value of the longitudinal electric field was determined by the deflection of a beam of electrons traversing the waveguide in a direction perpendicular to its axis. The measurements were performed with traveling waves in the waveguide, a suitable load being employed to prevent standing wave formation. Electrons of 10 keV energy were used; these traversed the waveguide in about one-tenth of a wave period. The electron beam deflection was calibrated at low frequency with the aid of a parallel plate capacitor, the distribution of the field between the plates of which approximated that of the field in the waveguide. The results of the measurements were expressed in terms of an equivalent shunt resistance and are presented graphically as a curve showing the equivalent resistance as a function of the phase velocity. [Abstracter's note: The authors state that the equivalent shunt resistance approaches zero as the phase velocity increases, but their curve does not substan-

Card 2/3

ACC.NR: AP4020575

tiate this, and it seems doubtful. The authors also state that the equivalent shunt resistance is considerably smaller than the theoretical value at the lower phase velocities, and they account for this as a result of collision frequencies comparable with (although smaller than) the wave frequency.7 "In conclusion, we consider it our pleasant duty to express our gratitude to Ya.B.Faynberg for his interest in the work and for valuable suggestions." Orig.art.has: 7 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 02Jul62	DATE ACQ: 31Mar64	ENCL: 00
SUB CODE: PH	NR REF SOV: 004	OTHER: 004

Card 3/3

BAKHTIN, V.I.

Sylphon micromanometers for measurements in ranges from 10^{-2} to 100 mm mercury column. Izm. tekh. no.3:47-48 My-Je '57. (MLRA 10:8)
(Manometer)

BAKHTIN, V.I., inzh.

Selecting strain gauges for magnetic compensation micromanometers.
Priborostroenie no.10:13-14 O '57. (MIRA 10:11)
(Manometer) (Strain gauges)

ALEKSOVSKIY, A.M.; BAKHTIN, V.I.

One method of measuring the degree of vacuum. Uch.zap. Sar.un. Vyp. fiz. 56:39-46 '57. (MIRA 12:11)
(Vacuum—Measurement)

SOV-120-58-1-22/43

AUTHOR: Bakhtin, V. I.

TITLE: An Automatic Compensation Method for the Measurement of Low Gas Pressures (Metod avtomaticheskoy kompensatsii dlya izmereniya malykh davleniy gaza)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp 88-93 (USSR)

ABSTRACT: A number of Soviet workers (Refs.1-6) have discussed the disadvantages of deformation manometers. Among these are the narrow working range of such manometers, a not very high stability of the elastic properties of the membranes usually employed, the necessity for a second evacuable chamber with a standard pressure in it and relative complexity of construction of such manometers with given characteristics. These disadvantages may be removed if, instead of elastic properties of a membrane, one uses automatic compensation of the gas pressure by some other means. A description is given of a new manometer which can be used to measure pressures of gases independently of the nature of these gases in a wide range of pressures and with high accuracy. The instrument relies on the automatic compensa-

An Automatic Compensation Method for the Measurement of Low Gas Pressures.

tion of the gas pressure which deforms an elastic membrane by the pondermotive forces due to a magnetic field. A measure of the gas pressure is the electric current flowing through the coil included in a controlling circuit. The instrument is free of the disadvantages of the usual deformation manometers. Two forms of the manometer were developed, one of which uses an elastic membrane as indicated above and the other a special bellows. In the case of the latter instrument, the range of pressures is 5×10^{-3} to 20 mm Hg and in the case of the former the range is 10^{-3} to 4.6 mm Hg. In the case of the bellows the reproduceability in the range 5×10^{-2} to 10 mm Hg is up to $\pm 6\%$ of the measured quantity. In the lower range the reproduceability is worse and can be up to ± 10 to 20%. The reproduceability for pressures greater than 10 mm Hg is better than ± 3 to 4%. In the case of the membrane model, reproduceability in the range 10^{-2} to 4.6 mm Hg is less than $\pm 5\%$ and in the lower range is again worse, namely, up to $\pm 10\%$. Calibration curves for the two instruments are shown in Fig.5 and sectional drawings are given in Figs.1 and 3. Figs. 2 and 4 give details of the circuitry employed. P. V. Golubkov, S. I. Sorokin and

30V-120-58-1-22/43

An Automatic Compensation Method for the Measurement of Low Gas Pressures.

B. M. Zamorozkov are thanked for their help. There are 5 figures, no tables and 6 Soviet references.

ASSOCIATION: Saratovskiy gosudarstvennyy universitet (Saratov State University)

SUBMITTED: December 24, 1956.

1. Gases--Pressure 2. Pressure--Measurement 3. Manometers --Design 4. Manometers--Effectiveness

Card 3/3

28(5)

AUTHOR: Bakhtin, V. I., Engineer SOV/119-59-1-11/20

TITLE: On the Deflection of Membranes in a Manometer With Autocompensation Effect (O progibakh membrany v manometre avtokompensatsionnogo deystviya)

PERIODICAL: Priborostroyeniye, 1959, Nr 1, pp 20-22 (USSR)

ABSTRACT: The newly developed device and the application of the method of automatic compensation of gas pressure by a membrane permit the difficultly determinable physical quantity of the deflection of a membrane to be transformed into the measurement of electric current. The device partly consists of steel low in carbon and partly of copper containing no oxygen. In the manometer case with a hole in its center as seen from underneath - the gas volume to be measured is connected here - is a flat membrane which is fastened above the connecting piece and is made of copper containing no oxygen. The upper side of the membrane (side turned away from pressure) is soldered to a plane plate. The plate is provided with a downward cylindrical extension on the end of which the mobile part of the coil is mounted. The upper part of the coil is a ground surface which is a condenser plate. The counter plate of the condenser is a ground steel plate

Card 1/2

which is fastened to the manometer casing by glimmer isolators. The case contains furthermore centering and limiting pins. The manometer as a whole is inserted in a cyclic space of a permanent magnet. The external diameter of the permanent magnet is 160 mm the internal 136 mm and its height 60 mm. The magnetic space has an external diameter of 99 and an internal of 91, the height is 13 mm. The manometer operates in the following way: At rising gas pressure underneath the membrane the latter shows a tendency of an upward deflection. This tendency is taken by the abutment of the membrane - it is not more than a fraction of a micron. This variation is transferred on to the condenser. The variation in the condenser capacity is recorded by an electric measuring device amplified and led to the mobile coil as electric current. In theory the deflection of the membrane and the variation of the condenser capacity connected with it are derived. A comparison between the values thus computed and those experimentally obtained shows that they agree very well. No relation can be found between the results and the elastic properties of the membrane. So to speak the membrane plays the part of a seal permeable to gas. There are 2 figures, 1 table, and 4 Soviet references.

28(2) SOV/115-59-5-9/27

AUTHOR: Bakhtin, V. I.

TITLE: About the Theory of Errors of Self-Compensating Manometers

PERIODICAL: Izmeritel'naya Tekhnika, 1959, Nr 5, pp 11-14 (USSR)

ABSTRACT: The article investigates the main sources of error of a sylphon micromanometer described in an earlier issue. Fig.1 (p.11) shows the block diagram of this instrument, which is based on the principle of self-compensation. The pressure which is to be measured deforms a sensible element, whose motions are shown by an electronic indicator. The mathematical part of the investigation follows with error calculations. There are 4 Soviet references.

Card 1/1

SOV/115-59-7-9/33

28(2)
AUTHOR: Dalchtin, V.I.

TITLE: The Dynamics of a Self-Compensating Manometer for Measuring Low Gas Pressures

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 7, pp 16-18 (USSR)

ABSTRACT: The author investigates an induction transducer of a self-compensating manometer as shown in fig.1. Fig.2 shows the electrical block diagram of the transducer. The manometer has a range of 10^{-2}-27 mm mercury column. Its error is $\pm$ 3% of the measured magnitude. The manometer is a closed, self-compensating circuit, equipped with a reading device for measuring compensating forces. The dynamic characteristics of the manometer depend on its design parameters. The author discusses the errors of self-compensating manometers. A dynamic error reduction in steady-state operation will result in increased intensity and duration of transient processes. However, this causes greater non-steady-state dynamic errors. There are 1 diagram, 1 block diagram and 1 Soviet reference.

Card 1/1

28(2) SOV/115-59-8-7/33

AUTHOR: Bakhtin, V. I.

TITLE: The Vibration Resistance of a Self-Compensating Pressure Gage

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 8, pp 15 - 17 (USSR)

ABSTRACT: Vacuum gages are usually exposed to vibrations and shocks. In vacuum gages with elastic elements, the influences of vibration interference and the pressure to be measured are of the same nature, but they are different in speed of changing within time. In a self-compensating pressure gage [Ref 1, 2, 3] this difference may be used for interference suppression. The author investigated a bellows-type pressure gage analytically, using data found in literature for the electrical vacuum equipment production, where the oscillation power is 5 erg.cm^{-2} sec^{-1} and the first harmonic cycle 0.05 sec. In case the feedback circuit of a self-compensated pressure gage is opened, the gage will behave like an ordinary deformation pressure gage. Calculations show that with the aforementioned parameters a bellows-type pressure gage with-

Card 1/4

The Vibration Resistance of a Self-Compensating Pressure Gage

out feedback may not be used for measuring gas pressures of less than 3.10^{-1} mm mercury column. The motion of the bellows-type pressure gage may be presented in the following form:

$$m\,\Delta\ddot{W}_0 + 2\eta\Delta\dot{W}_0 + K_{of}\Delta W_0 = F_0\sin(\omega t + \nu)$$

where m, 2η, K_{of} - oscillating mass, damping and rigidity of the bellows; ΔW_0 - its shift from the equilibrium position; F_0, ω, ν - amplitude, frequency and phase of the compelling force; t - time. For the self-compensating pressure gage, the following equation must be solved:

$$m\Delta\ddot{W}_0 + 2\eta\,\Delta\dot{W}_0 + K_{of}\Delta W_0 = F_0\sin\omega t - P$$

where P - is the compensating force. For a magnetoelectric compensating mechanism with the resistance R and the inductivity L, the author presents the following formula:

The Vibration Resistance of a Self-Compensating Pressure Gage

$$\dot{P} + \frac{R}{L}P = \frac{K_{k.m.}}{L} U_{o.y}$$

where $K_{k.m.}$ - proportionality factor between the compensating force and the current I flowing in the coil; $U_{o.y}$ - output voltage of the control element, fed to the coil terminals. The author compares the results for the two types of pressure gages. In the deformation pressure gage, the envelope oscillates with an amplitude of approximately 10^{-2} cm, while the envelope in the self-compensating pressure gage and amplitude of only 6.10^{-6} are observed. This means that hysteresis processes appear in the first case. Fluctuations of the pressure gage output signal may be suppressed by an inertia reading device, which is effective for both types of gages. However the reliability of the readings are not identical since the deformation pressure gage contains effects of slow fluctuation drift. Estimates show that, when using a reading device with a time constant of 0.3 sec (maximum limit for a vacuum gage) the vibration error

The Vibration Resistance of a Self-Compensating Pressure Gage

for a deformation gage will be $5 \cdot 10^{-2}$ mm mercury column for the self-compensating pressure gage. The author states that self-compensating pressure gages may be used for precision measurements not only under laboratory conditions but also under shop conditions. There are 3 Soviet references.

BAKHTIN, V. I., Cand Tech Sci -- (diss) "Autocompensational method for the measurement of rarified gases." Moscow, 1960. 14 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Engineering Physics Inst); 140 copies; price not given; (KL, 27-60, 152)

BAKHTIN, V.I.; MIKHAYLIN, V.N.

Self-compensated thermal vacuum manometer. Izm.tekh. no.9: 25-26 S '60. (MIRA 13:9)
(Electronic instruments) (Vacuum gauges)

L 10633-66 EWT(m)/EWP(j)/T/EWP(t)/EWP(b)/ETC(m) IJP(c) JD/WW/RM
ACC NR: AR5023520 SOURCE CODE: UR/0275/65/000/008/A027/A027

SOURCE: Ref. sh. Elektronika i yeye primeneniye, Abs. 8A203

AUTHOR: Bakhtin, V. I.; Ryabov, A. V.

TITLE: Experimental investigation of the working parameters of halogen self-quenched counters depending on their gas-mixture/pressure

CITED SOURCE: Uch zap. Mordovsk. un-t. vyp. 36, 1964, 100-111

TOPIC TAGS: bromine, neon, argon, gas filled counter

TRANSLATION: Experiments were conducted on a vacuum outfit which permitted exhausting and filling test counters from a tank in which Br, Ne, and Ar gases were mixed at various component ratios. Curves of the counter working parameters and firing voltages vs. each gas content, with constant pressure of two other gases, are presented. A method of calculation is offered, as well as nomographs for determining the counting start for various pressures of the filling gas-mixture components. Bib 1.

SUB CODE: 18

Card 1/1 UDC: 621.387.4

L 45798-66 EWT(1)

ACC NR: AR6023258 SOURCE CODE: UR/0058/66/000/003/A049/A049

AUTHOR: Bakhtin, V. I.

TITLE: On the calculation of the counting rate of self-quenching corona-discharge counters

45
B

SOURCE: Ref zh. Fizika, Abs. 3A425

REF. SOURCE: Uch. zap. Mordovsk. un-t, vyp. 30, 1965, 63-69

TOPIC TAGS: gas discharge counter, self quenching counter, ionization counter, electric discharge ionization, pulse counting

ABSTRACT: A simplified procedure is proposed for calculating the minimum time lost in a self-quenching counter for registration of one ionized particle. This time is equal to the sum of two intervals, $\tau_1 + \tau_2$, where τ_1 is the discharge ignition time and τ_2 is the time of drift of the positive ions from the place of their occurrence to the critical ion-cathode distance at which the counter practically returns to the initial state. As a result of an analysis of the processes in the counter, expressions are obtained for the values of τ_1 and τ_2. I. Breydo. [Translation of abstract]

SUB CODE: 20

Card 1/1 JS

L 45815-66 EWT(m)

ACC NR: AR6023257 SOURCE CODE: UR/0058/66/000/003/A049/A049

AUTHOR: Bakhtin, V. I.; Ryabov, A. Y. 18 B

TITLE: Calculation of the counting threshold voltage of halogen self-quenching counters

SOURCE: Ref zh. Fizika, Abs. 3A424

REF. SOURCE: Uch. zap. Mordovsk. un-t, vyp. 30, 1965, 70-77

TOPIC TAGS: Geiger counter, gas discharge counter, self quenching counter

ABSTRACT: The authors consider quantitative relations in each stage of development of the discharge in a Geiger-Mueller counter. An equation is derived connecting the voltage at which counting begins with the structural parameters of the counter and the partial pressures of the components of the gas mixture. The equations include also six constant coefficients, which are best determined experimentally for each given counter construction. It is noted that at the present time an experimental verification of the equation is presently underway. I. Breydo. [Translation of abstract]

SUB CODE: 20, 09

Card 1/1

BAKHTIN, V.Ye.; PANAYEV, V.N.

Mechanization and automatic control of the assaying of ores and tailings in asbestos ore dressing plants. Trudy NIIasbest. no.2:127-132 '62. (MIRA 16:12)

BAKHTIN, Ye.K.

A means of protecting thin electrolytic grids used in electron microscopy from mechanical injury. Tsitologiia. 6 no.3:389-391 My-Je '64. (MIRA 18:9)

1. Sektor elektronnoy mikroskopii otdela eksperimental'noy biologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSSR, Novosibirsk.

BAKHTIN, Ye.K.; STETKEVICH, A.A.

Photometric method of determining the ultraviolet activity of bactericidal lamps. Trudy TomNIIVS 14:285-288 '63.

Apparatus for ultraviolet irradiation of virus suspensions. Ibid.:289-292 (MIRA 17:7)

1. Tomskiy nauchn-issledovatel'skiy institut vaktsin i syvorotok.

BAKHTIN, Ye.K.

Method for preparing specimens on a film stretched on a frame for electron microscopy. Lab. delo 8 no.3:50-52 Mr '62. (MIRA 15:5)

1. Elektronnomikroskopicheskaya laboratoriya Tomskogo nauchno-issledovatel'skogo instituta i syvorotok (dir. - kand.med.nauk B.G.Truklmanov).
(ELECTRON MICROSCOPE)

BAKHTIN, Ye.K.; STETKEVICH, A.A.

Method and apparatus for the extraction of brain tissue from animals. Vop.virus. 7 no.6:735-736 N-D '62. (MIRA 16:4)

1. Tomskiy nauchno-issledovatel'skiy institut vaktsin i syvorotok.
(MEDICAL LABORATORIES--EQUIPMENT AND SUPPLIES)

BAKHTIN, Ye.K.

Special capsules for oriented and ordinary embedding of electron microscope objects. Lab.delo 8 [i.e.9] no.1:56 Ja '63.
(MIRA 16:5)

1. Elektronnomikroskopicheskaya laboratoriya Tomskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok (direktor B.G. Trukhmanov).
(ELECTRON MICROSCOPY) (MICROTOMY)

BAKHTIN, Ye.K.; OLINSKIY, M.A.

Device for maintaining necessary level of liquid in the collecting trough on the ultramicrotome. TSitologiia 7 no.5: 682-683 S-O '65. (MIRA 18:12)

1. Institut avtomatiki i elektrometrii i otdel eksperimental'noy biologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted February 12, 1963.

BAKHTIN, Yu.G., inzhener.

The TPZh-1 manometric thermometer. Priborostroenie no.7:30-31 Jl '57. (MLRA 10:9)

(Thermometers)

KLIMOV, V.I.; BAKHTIN, Yu.I.; IVANOVA, G.V.

Approximation of tables for thermodynamic functions of individual substances. Izv. vys. ucheb. zav.; khim. i khim. tekh. 8 no.1:168-169 '65. (MIRA 18:6)

SHARLAY, I.V.; IVANOVA, I.N.; BAKHTIN, Yu.K.

Pathogenesis of recurrent infectious hepatitis in children. Vop. okh.mat.i det. 8 no.3:11-15 Mr '63. (MIRA 16:5)

1. Iz kafedry infektsionnykh bolezney u detey (zav. - prof. A.T. Kuz'micheva) Leningradskogo pediatricheskogo meditsinskogo instituta (dir. Ye.P. Semenova).
(HEPATITIS, INFECTIOUS)

SHARGEY, I.V.; IVANOVA, N.I.; [illegible], Yu.K.

Pathogenesis of recurrence of Botkin's disease in children. Vop. okh. mat. i det. 8 no.7:43-48 Jl '63. (MIRA 18:12)

1. Iz kafedry detskikh infektsionnykh bolezney (zav.- prof. A.T. Kurbatcheva) Leningradskogo pediatricheskogo meditsinskogo instituta.

MAMED-ZADE, S.A.; BAKHTINA, M.K.

Hepatocholecystitis. Izv.AN Azerb. SSSR. Ser.biol. i med.nauk no. 12:95-100 '61. (MIRA 17:5)

LEONT'YEV, O.K.;BAKHTINA, M.Ye.;DOBRYNINA, T.A.

Study of drift in the coastal zone of the northwestern Caspian.
Trudy Okean.kom. 4:18-30 '59. (MIRA 13:4)

1.Moskovskiy gosudarstvennyy universitet.
(Caspian Sea--Coasts)

LEON'TYEV, O.K.; BAKHTINA, M.Ye.; DOBRYNINA, T.A.

Mechanical composition of sediments as an indicator of the dynamics of the northwestern coastal zone of the Caspian Sea. Vest.Mosk. un.Ser.biol., pochv., geol., geog. 14 no.1:197-205 '59. (MIRA 12:9)

1. Moskovskiy gosudarstvennyy universitet, Kafedra geomorfologii.
(Caspian Sea--Beach erosion)

BATENKO, A.I.; BAKHTINA, V.N.

Using mineral fertilizers in ponds. Trudy sov. Ikht. kom. no.14:33-36 '62. (MIRA 15:12)

1. Vserossiyskiy nauchno-issledovatel'skiy institut prudovogo rybnogo khozyaystva (VNIPRKh).
(Fishponds)
(Fertilizers and manures)

BAKHTINA, Ye. A., YAMPOLSKIY, T. C., Inzh., BAZHENOV, V. P., Inzh., VEREVIN, F.P., Inzh.

Vsesoyuznaya Kontora Tipovogo Proyektirovaniya I Tekhnicheskikh Issledovaniy (KTIS) Mintyazhstroya

Ventilyatornyye Gradirni

Page 53

SO: Collection of Annotations of Scientific Research Work on Construction, completed in 1950. Moscow, 1951

BAKHTINA, Ye. A.

BAKHTINA, Ye. A., Inzhener. i, YAMPOL'SKIY, T. S., Inzh., VERIN, N. F., Inzh.

Vsesoyuznaya Kontora Tipovogo Proyektirov-aniya i tekhnicheskikh issledovaniy (KTIS) Mintyazhstroya

Sistemy mesnoy kanalizatsii s polyami podzemnoy fil'tratsii (instruktsiya po prove ktirovaniyu sistme) Page 60

SO: Collection of Annotations of Scientific Research Work on Construction, completed in 1950. Moscow, 1951

BAKHTINOV, P. P. DECEASED 1962/?

c. 1962

METALLURGY

see ILC

BAKHTINOV, V.B.

Efficiency of the substitution of nonferrous metals in metal-rolling equipment. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst. nauch. i tekh.inform. 16 no.11:7-10 '62. (MIRA 16:11)

PODVAL'NYY, A.Yu., kand. med. nauk (Kazan', ul. Tel'mana, 22, kv.1); BAKHTIOZIN, F.Sh.

Arthrography in injuries of the meniscus of the knee joint. Vest. khir. 92 no.1:92-93 Ja '64. (MIRA 17:11)

1. Iz Kazanskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (dir. - U.Ya. Bogdanovich).

POLUSHKIN, V.I., starshiy inzh.; BAKHTIOZIN, R.A., starshiy inzh.

There is something to be learned from construction workers of the Chelyabinsk railroad district. Avtom., telem. i sviaz' 5 no.6:42 Je '61. (MIRA 14:9)

1. Laboratoriya signalizatsii i svyazi Kazakhskoy dorogi.
(Chelyabinsk—Railroads—Signaling)
(Chelyabinsk—Railroads—Employees)

VERKHOVSKIY, Ya.I.; ANTONOVA, A.S.; [illegible]

Groups for analyzing technical documentation. Avtom., telem. i svias' 9 no.12:32-33. D '65.

(MIRA 29:1)

1. Glavnyy inzh. sluzhby signalizatsii i svyazi Gor'kovskoy dorogi (for Verkhovskiy). 2. Starshiy inzh. otdela signalizatsii, tsentralizatsii, blokirovki i svyazi Kazakhskoy dorogi (for Antonova). 3. Starshiy inzh. [illegible] otdela signalizatsii, tsentralizatsii, blokirovki i svyazi Kazakhskoy dorogi (for Bakhtiarin).

BAKHTIOZIN, R. A., GORBIS, Z. R., and KALENDAR'YAN, V. A.

"Thermal Properties of Synthetic Graphite Particles."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

BAKHTIOSIN, R. A., and GORBIS, Z. P.

"Experimental Investigations on Convective Heat Transfer of Flows with Dust Particles."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

GORBIS, Z.R., kand.tekhn.nauk, dotsent; BAKHTIOZIN, R.A., inzh.

Concerning the aerodynamic characteristic of graphite particles. Izv. vys. ucheb. zav.; energ. 4 no.11:101-104 N '61. (MIRA 14:12)

1. Odesskiy tekhnologicheskiy institut. Predstavlena kafedroy teplotekhniki.

(Graphite) (Pneumatic-tube transportation)

KALENDER'YAN, V. A.; BAKHTIOZIN, R. A.; GORBIS, Z. R.

Thermophysical and other characteristics of artificial graphite particles. Teplo- i massoper. 1:131-139 '62. (MIRA 16:1)

1. Odesskiy tekhnologicheskiy institut.

(Graphite) (Powders)

BAKHTIOZIN, R.A.; GORBIS, Z.R.

Convective heat transfer of a gas-graphite suspension flow in longitudinally ribbed channels. Trudy Od. tekh. inst. 14: 55-63 '62. (MIRA 16:12)

1. Rabota vypolnena na kafedre teplotekhniki Odesskogo tekhnologicheskogo instituta. Rukovoditel' raboty - doktor tekhn. nauk, prof. Gokhshteyn, D.P.

S/089/62/012/005/002/014
B102/B104

26.5200 26.2232
26.2221

AUTHORS: Gorbis, Z. R., Bakhtiozin, R. A.

TITLE: Investigation of convective heat transfer from a gas-graphite suspension during its flow in vertical channels

PERIODICAL: Atomnaya energiya, v. 12, no. 5, 1962, 378-384

TEXT: Heat-removal in gas reactors can be considerably improved by using a mixture of gas and graphite dust as coolant (D. Schluderberg et al. Gaseous Suspensions - a New Reactor Coolant, 19, No. 8, 67 (1961)). Published data on such coolants, however, are inadequate. The authors studied the convective heat transfer from the inner wall of a copper tube to the gas-graphite suspension flowing through. The theory is examined on the basis of simplifying assumptions. The convective heat transfer coefficient is given by the approximate relation

$\alpha_c \simeq \frac{1}{\theta} v_g \rho_g (c_g \xi'_g + c_s \xi'_s)$; ρ - specific weight, v - absolute velocity, c - specific heat, ξ' - local friction coefficient; the subscript g refers to gas, s to solid. For a pure gas, $\alpha_g = \frac{1}{\theta} \xi'_g c_g \rho_g v_g$, so that

Card 1/3

Investigation of convective heat ...

$\alpha_c/\alpha_g = Nu_c/Nu_g \cong 1 + mc_s/c_g\mu$; μ - weight concentration of solid particles in the gas flow, $m = f(Re_g, Re_s, D/d_s)$; D and d_s are the equivalent diameters of channel and particles. The experiments were made in the concentration range $\mu<50$ for which the contact heat exchange α_k in the gas suspension is proportional to D/d_s and $\alpha_k/\alpha_g = 11\ Re^{0.01}(D/d_s)^{0.2}\mu^{-0.6}$. Two apparatuses were specially constructed for the experiments, such that a) the mixture flows in a circuit which is closed for the graphite dust and open for the gas (air); b) the heat transfer of the suspension can be considered as a component of the heat transfer to the water counterflow; c) in the part of the tube where the heat transfer is measured, the heat flux is directed from the suspension to the tube wall; d) the effect of the graphite particle concentration, and size, of the tube diameter and the gas flow rate can be determined in accordance with the theoretical assumptions. The measurements were made with 12, 20, 25 and 33 mm tube width and 0.15, 0.4, 0.77, 1.44, 2.08 mm particle diameter. Results: With increasing Re the relative intensity of the heat transfer of the suspension

Card 2/3

decreases. The heat transfer depends on the kind of the gas (for CO_2 Pr and c_s/c_g are somewhat higher, for He somewhat lower than for air) and on its temperature. The form of the solid particles has almost no effect; if the particle size is reduced, the heat transfer is improved; somewhere an optimum exists. The results were found to depend on the heat-flux direction: If the suspension is cooled the heat exchange is less intense than when it is heated. There are 5 figures.

SUBMITTED: May 16, 1960

Card 3/3

11 A

C.A.

BAKHTIOSINA, S.KH.

Chemical transfer of stimuli along nerve trunks. B. Kh. Bakhtiosina (Inst. Physiol., Acad. Sci. Kazakh. S.S.R., Alma-Ata). *Vestnik Akad. Nauk Kazakh. S.S.R.* 4, No. 4 (25) 39-42(1947).—The isolated sciatic or vagus nerve of narcotized cats, dogs, rabbits, and frogs was placed in Ringer soln. with or without eserine and stimulated by high-frequency discharges. The surrounding soln. developed a substance (probably NH_4) that inotropically activated an isolated frog heart, frog muscle, and other test objects.
G. M. Kosolapoff